Review of Request for Variance from Water Quality Based Effluent Limits for the City of Boulder WWTF

EPA has requested an economic analysis to inform its overall analysis regarding whether an individual variance from numeric nutrient criteria is appropriate for the City of Boulder's wastewater treatment facility (WWTF), based on EPA Guidance and practice, and data availability. Abt Associates conducted a preliminary analysis consistent with EPA's Interim Economic Guidance for Water Quality Standards (U.S. EPA, 1995), and publicly available data. We present a summary of the analysis and our conclusions below. Since we limited our review to the economic analysis, we did not review the appropriateness of the water quality targets and resulting effluent limitations, or other potential bases for a variance.

1 Background and Project Information

The Boulder Wastewater Treatment Facility (WWTF) serves a population of 1,445 people in the City of Boulder (Montana DEQ, 2015a). The facility is currently a three-cell facultative lagoon, but has commenced construction on a new activated sludge WWTF that will replace this existing system. The new WWTF, scheduled for completion in December 2015 (Denning, Downey & Associates, 2014), will have a design flow of 0.18 mgd and consist of the following elements: headworks consisting of screening and influent flow measurement; influent lift pumps; aeration basins; polishing basins; two secondary clarifiers; aerobic sludge digestor; sludge drying beds; ultraviolet light disinfection of the effluent and effluent flow measurement. After full optimization, the facility anticipates that it will be able to treat to 8 mg/L TN and less than 0.5 mg/L TP.

The applicable numeric nutrient criteria for the facility are 0.275 mg/L TN and 0.025 mg/L TP, and the final permit limitations are 4.6 mg/L TN and 0.25 mg/L TN.

2 Verifying Project Controls and Costs

We developed a preliminary estimate of incremental compliance costs to reach these permit limits using a Water Environment Research Foundation (WERF) report (WERF, 2011) that provides estimates of costs for hypothetical treatment trains providing various levels of nutrient removal. Specifically, Table 4-3 of WERF (2011) provides unit cost data that are based on flow (e.g., dollars per gallon per day capacity) for each of several levels of treatment. The activated sludge plant currently under construction at Boulder is capable of producing an effluent with 8 mg/L of TN and <0.5 mg/L TP with optimal operation. Although these results are equivalent to those that could be achieved by treatment at WERF level 3, based on the available information, the equipment being installed at Boulder most closely matches WERF's level 1 treatment train.[1]

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[1] Specifically, the Boulder facility does not include an anoxic zone. The actual facility does, however, appear to include alum addition, which is not included in WERF level 1. Thus, WERF level 1 costs are likely to be a low-end

For level 1 treatment, WERF (2011) estimates capital costs of $9.3 million per million gallons per day (MGD) capacity and operations cost of $250 per million gallons treated. Applying these costs to the design and average flow for Boulder (0.40 MGD and 0.18 MGD, respectively) results in a total capital cost of $3.72 million and an operations cost of approximately $16,400 per year (assuming year-round operation). We used the Engineering News Record (ENR) construction cost index (CCI) to escalate capital costs to current dollars by multiplying by 1.1.[2] Because WERF's operating costs are based on energy and chemical costs, we used the consumer price index (CPI) to escalate operating costs to current dollars by multiplying by 1.05.[3] This escalation results in in a total capital cost of $4.1 million and an operations cost of approximately $17,200 per year in current year dollars. For comparison, the actual total capital cost for the new Boulder activated sludge plant is reportedly $4.22 million.[4]

To meet future nutrient limits of 4.6 mg/L TN and 0.25 mg/L TP would require treatment corresponding to WERF level 3 or level 4. We assumed that level 4 treatment would be required to guarantee meeting the future nutrient limits, allowing for a safety factor. For level 4 treatment, WERF (2011) estimates capital costs of $15.3 million per MGD capacity and operations cost of $880 per million gallons treated. Applying these costs to the design and average flow for Boulder (0.40 MGD and 0.18 MGD, respectively) results in a total capital cost of $6.12 million and an operations cost of approximately $57,800 per year (assuming year-round operation). Applying the escalation factors discussed above results in in a total capital cost of $6.74 million and an operations cost of approximately $60,700 per year in current year dollars.

The incremental capital cost for upgrading from WERF level 1 treatment, which the planned Boulder facility appears to resemble, to WERF level 4 treatment, which would be required to meet the future limits, would be $6.74 million – $4.1 million = $2.64 million. The incremental difference in operating costs between WERF level 1 and WERF level 4 would be $60,700 - $17,200 = $43,500 per year. Data are not available on the estimated operating cost for the planned Boulder facility, so we used this incremental difference between WERF level 1 and WERF level 4 operating costs as a starting point.

The WERF (2011) unit operating costs include energy and chemical costs only, not labor. Although incremental labor requirements can be minimized when automated controls are present, labor costs can be highly dependent on site-specific factors (U.S. EPA, 2008). For conventional activated sludge treatment as a whole, however, estimated labor costs can be as much as two-thirds of total annual operating costs (Young et al., 2012). Therefore, to account for potential incremental labor, the analysis multiplies the incremental operating cost by three to

estimate of the value of nutrient removal equipment being installed at Boulder.
[2] The average ENR CCI for 2014 was 9806 and the average ENR CCI for 2011 was 9070, resulting in an escalation factor of 9806 / 9070 = 1.1.
[3] The CPI for 2014 was 236.736 and the average CPI for 2011 was 224.939, resulting in an escalation factor of 236.736 / 224.939 = 1.05.
[4] Based on a personal communication from Jim Brown (Montana Department of Environmental Quality) to EPA, April 2015.

$130,500 per year. Note that this incremental operating cost assumes year-round operation. Actual incremental operating costs would be lower if the nutrient criteria do not apply year-round and if elements of the upgraded treatment system could be shut down, bypassed, or placed on standby during the period when the criteria do not apply.

3 Municipal Preliminary Screener

To demonstrate that the costs of pollution control would result in substantial and widespread economic and social impacts justifying a variance, the discharger (in this case, the City of Boulder) must first demonstrate that it would face substantial financial impacts through a two-part test, including a municipal preliminary screener (MPS) and Secondary Test.

The first step in determining whether impacts will be substantial involves combining the estimated compliance costs with existing pollution control costs, and comparing the result (on a per-household cost basis) to median household income (MHI) to obtain an MPS value. Exhibit 3-1 shows the assumptions and data sources for the MPS calculation. Based on the assumptions and data shown, we calculate that the project could result in an MPS of 2.4%.[5]

Exhibit 3-1: Municipal Preliminary Screener

Variable	Estimate	Data Source
Capital costs (project costs plus land)	$2.64 million	See Section 2
Annual O&M costs (electricity, salaries, testing, insurance, administration, supplies, and repairs)	$130,500	See Section 2
Interest rate for revenue bonds (for annualizing capital costs)	2.5%	Current interest rate for Montana Water Pollution Control State Revolving Fund (Montana DEQ, 2015b)
Time period of financing (for annualizing capital costs)	20 years	
Annual project costs	$299,848	Annualized capital plus annual O&M
Population served	1,445	Montana DEQ (2015a)
People per household	2.2	1,250 people in Boulder (average, 2009 to 2013) divided by 565 households; from U.S. Census Bureau (2013a)
Number of households served	656	Population served divided by people per household
Existing annual per-household costs	$456	Rural Community Assistance Corporation (2014); $38 per month (Table 4b) times 12 months
Amount of annual existing costs paid by households	$299,136	Existing annual per-household costs times the number of households

[5] For comparison to costs noted in email communication to EPA based on input from the City, keeping all other assumptions the same and increasing the incremental capital costs of the project to $5 million (for total project annual costs of $451,236) would yield total annual household costs of $1,144 and an MPS of 3.0%; at capital costs of $10 million (for total project annual costs of $771,971) would yield total annual household costs of $1,633 and an MPS of 4.3%.

Total annual cost of existing controls	$323,331	2014 Sewer Revenues from the 2014 Draft Audit Report[1]
Share of annual existing and project costs paid by households	92.5%	Amount of annual existing costs paid by households divided by total annual cost of existing controls
Amount of annual project costs to be paid by households	$277,411	Total annual project costs times the share of annual existing and project costs paid by households[2]
Annual per-household pollution control project cost	$423	Household share of annual costs divided by number of households
Total annual cost of pollution control per household	$879	Household existing costs plus project costs
Median Household Income (2013$)	$35,670	U.S. Census Bureau (2013b)
Median Household Income (2014$)	$36,249	Adjusted based on Consumer Price Index (2014=236.74; 2013=232.96)
Municipal Preliminary Screener (MPS)	2.4%	Total annual cost of pollution control divided by median household income

O&M = operations and maintenance
1. Denning, Downey & Associates (2014).
2. We assumed that households will provide revenues for the new pollution control project in the same proportion that they support existing pollution controls.

4   Secondary Test

If the MPS indicates that the economic effects of the pollution control project may be substantial (with a borderline impact being between 1% and 2% and a large impact being over 2%), the next step is to use the Secondary Test to evaluate the community's ability to obtain financing as well as general socioeconomic health. The Secondary Test is designed to build upon the characterization of the financial burden identified in the MPS. Indicators describe pre-compliance debt, socioeconomic, and financial management conditions in the community. For more information on the need for the Secondary Test, see the Appendix and U.S. EPA (1995).

We calculated the Secondary Test for the City of Boulder using U.S. EPA (1995; Section 4.1) and Montana's alternative Secondary Test (Montana DEQ, 2014; Section 4.2), which eliminates debt and financial management indicators in favor of socioeconomic indicators. For more details on Montana's modified Secondary Test, see Exhibit 4-1 and Section 4.2.

Exhibit 4-1. Comparison of EPA 1995 Guidance and MT Guidance: Secondary Test of Substantial Impact, Public Entities

EPA Indicator	Interpretation	MT Department Indicator
Debt Indicators		
Bond Rating	Indicates the community's credit capacity.	None

Overall Net Debt as a Percent of Full Market Value of Taxable Property	Indicates the debt burden on residents and measures the ability of the community to issue additional debt.	None
Socioeconomic Indicators		
Unemployment Rate	Indicates the general economic health of the community.	Unemployment Rate
Median Household Income	Indicates overall wealth of the community.	Median Household Income Poverty rate[a] LMI percentage rate[b]
Financial Management Indicators		
Property Tax Revenue as a Percent of Full Market Value of Taxable Property	Indicates the funding capacity to support new expenditures, based on the wealth of the community.	(Property Tax + Fees + Revenues)/MHI/Population × 100[c]
Property Tax Collection Rate	Indicates the efficiency of the tax collection system and measures how well the local government is administered.	None
a. Evaluated as follows: strong: < 6%; midrange: 6% to 40%; and weak: >40%. b. Low to medium income (LMI) percentage rate, defined as the percent of population earning 200% of the poverty threshold or below. Evaluated as follows: strong: < 10%; midrange: 10% - 45%; weak: >45%. c. Evaluated as follows: strong: <1.5; midrange: 1.5 – 3.5; weak: >3.5.		

4.1   Secondary Test Based on EPA Guidance

To conduct the Secondary Test for the City of Boulder using U.S. EPA (1995) Guidance, we used socioeconomic data from the U.S. Census and recent financial statements provided by the City Clerk,[6] including the 2014 Draft Audit Report (Denning, Downey & Associates, 2014) and Certified Taxable Valuation Information Form (Montana Department of Revenue, 2014).

Debt Indicators
Debt indicators include the bond rating, which provides a measure of the creditworthiness of the community, and the overall net debt as a percent of the full market value of taxable property, which is a measure of the debt burden on residents in the community and a measure of the ability of local government jurisdictions to issue additional debt.

We did not find a bond rating for the City of Boulder (nor for any entity in Boulder such as a school district). As noted by U.S. EPA (1995), the absence of a bond rating does not indicate strong or weak financial health. Consistent with U.S. EPA (1995), we excluded this metric from the calculation of the Secondary Score.

The 2014 Draft Audit Report (Denning, Downey & Associates, 2014; page 6) shows that the net debt for government activities (repaid via property taxes) for the City of Boulder was $185,483, and the 2014 Certified Taxable Valuation Information Form (Montana Department of Revenue, 2014) shows that the 2014 total market value was $30,425,170. The Audit Report does not show

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[6] Provided by City Clerk Diana Van Haecke via email, June and July 2015.

any overlapping debt (such as for a school district).[7] Based on this, the overall net debt as a percent of full market value of taxable property is 0.6%.

However, this calculation does not fully reflect the amount of debt owed by the community, nor its potential ability to issue additional debt. The City also has $637,472 in debt for business-like activities that are primarily repaid with service fees (Denning, Downey & Associates, 2014). Although this additional debt is not repaid by property taxes, it impacts the community's ability to take on debt, which is the purpose of this indicator. Had this additional debt been financed via general obligation bonds rather than revenue bonds, for example, it would be repaid via property taxes and included in the debt used for this indicator. Including both types of debt would result in total debt of $822,955 and the overall net debt as a percent of full market value of taxable property of 2.7% (although full market value of taxable property is not necessarily the appropriate comparison for both types of debt). As such, the City may be more appropriately characterized as mid-range on this metric.

Socioeconomic Indicators

Socioeconomic indicators include community-specific MHI (compared with the state level MHI) and the local unemployment rate (compared with the national rate). As shown in Exhibit 3-1, MHI for the City of Boulder for the period 2009 to 2013 was $35,670. Data from the U.S. Census Bureau (2013c) indicates that MHI for Montana during the same period was $42,230.[8] Since the City's MHI is more than 10% below the state MHI, the City is weak on this indicator.

According to the United States Bureau of Labor Statistics, unemployment in Jefferson County was at 3.5% in June, compared with a national unemployment rate of 5.3%. Since the local rate is more than 1% below the national rate, the City is strong on this indicator.[9]

Financial Management Indicators

Financial management indicators include the property tax revenues as a percent of full market value of taxable property ("property tax burden") and property tax collection rate. Property tax burden indicates the funding capacity to support new expenditures, based on the wealth of the community, while the property tax collection rate provides an indicator of the efficiency of the tax collection system and a measure of how well the local government is administered.

According to Denning, Downey & Associates (2014), property tax revenues for 2014 were $183,236. As a share of the full market value of taxable property ($30,425,170), property tax revenues are 0.6%. Since this is below 2%, the City is strong on the property tax burden metric. However, as with the debt indicator discussed above, debt for wastewater projects may not necessarily be repaid by property taxes (e.g. it is likely repaid by service fees), and this metric may not fully reflect the community's ability to support new expenditures.

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[7] See Section 5 for a discussion of the uncertainties associated with overlapping debt in this analysis.
[8] Income is not updated to current dollar years for the Secondary Test.
[9] See Section 5 for additional discussion about existing employment in the community and potential changes in the short-term.

The Draft Audit Report (Denning, Downey & Associates, 2014) provides information for the property tax collection rate for the fiscal year 2014. U.S. EPA (1995) defines the property tax collection rate as the ratio of the actual amount collected from property taxes to the amount levied. However, the amount levied for the City of Boulder is not available in financial documents; as such, we used the ratio of the actual amount collected to the final amount budgeted.[10] For fiscal year 2014, the final amount budgeted for taxes and assessments was $199,329 while the amount collected was $196,765 for a collection rate of 98.7%. As such, the City is strong on this indicator.

Secondary Test Data and Results
Exhibit 4-2 shows available data for the Secondary Test and Exhibit 4-3 provides the Secondary Score.

Exhibit 4-2: Secondary Test Data Based on EPA Guidance

Variable	Value	Data Source
Number of Households	656	see Exhibit 3-1
Median Household Income (2013$)	$35,670	see Exhibit 3-1
State Median Household Income	$42,230	U.S. Census Bureau (2013c)
Community unemployment rate	3.5%	June unemployment rate for Jefferson County from Bureau of Labor Statistics
National unemployment rate	5.3%	June unemployment rate for United States from Bureau of Labor Statistics
Market value of taxable property	$30,425,170	2014 Total Market Value from the 2014 Certified Taxable Valuation Information[1]
Property tax collection rate	98.7%	Actual taxes and assessments collection ($196,765) divided by final budgeted amount ($199,329) from 2014 Draft Audit Report[1,2]
Direct net debt	$822,955	Long-term debt outstanding for governmental activities and business-like activities, from 2014 Draft Audit Report[1]
Overlapping debt	$0	None listed in 2014 Draft Audit Report[1]
Property tax revenues	$183,236	Property taxes for general purposes from 2014 Draft Audit Report[1]
1. Draft Audit Report (Denning, Downey & Associates, 2014) and Certified Taxable Valuation Information (Montana Department of Revenue, 2014) for the City of Boulder. 2. The 1995 Guidance defines the property tax collection rate as the ratio of the actual amount collected from property taxes to the amount levied. However, the amount levied for the City of Boulder is not available; as such, we used the ratio of the actual amount collected to the final amount budgeted.		

Exhibit 4-3: Secondary Score Based on EPA Guidance

Indicator	Result	Score
Bond Rating	Not Available	n/a

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[10] The 2014 Draft Audit Report (Denning, Downey & Associates, 2014) provides both the original budgeted amount and the final budgeted amount.

Overall Net Debt as Percent of Full Market Value of Taxable Property	2.7%	2
Unemployment	3.5% [compared to 5.3% nationally]	3
Median Household Income[1]	$35,670 [compared to $42,230 statewide]	1
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	0.6%	3
Property Tax Collection Rate	98.7%	3
Average of Financial Management Indicators[2]	$(3 + 3) \div 2$	3
Secondary Score[3]		*2.3*

Source: See Exhibit 4-2.
1. Not updated for the Secondary Test.
2. If one of the debt or socioeconomic indicators is not available (in this case, the bond rating), the two financial management indicators (property tax revenues as a percent of full market value of taxable property and property tax collection rate) are averaged and this averaged value is used as a single indicator with the remaining indicators.
3. Average of scores for the following indicators: Overall net debt as a percent of full market value of taxable property, unemployment, median household income, and average of financial management indicators.

4.2 Secondary Test Based on Montana Alternative

In comparison with EPA's 1995 Guidance Secondary Test, the Montana DEQ (see Montana DEQ, 2014) has modified the Secondary Test such that much of the financial and debt information is not considered (eliminating both debt indicators in favor of socioeconomic indicators, and eliminating or altering both financial management indicators), but more information on household income is provided.[11] Exhibit 4-4 shows the metrics and interpretation using Montana's alternative approach. This section calculates the Secondary Score based on Montana's alternative approach.

Exhibit 4-4. Secondary Test Based on Montana DEQ Guidance

Indicator	Weak (Score of 1)	Mid-Range (Score of 2)	Strong (Score of 3)
Poverty Rate	More than 40%	6 to 40%	Less than 6%
Low to Medium Income Percentage (LMI)	More than 45%	10 to 45%	Less than 10%
Unemployment	More than 1% above state average	State average	More than 1% below state average
Median Household Income	More than 10% below state median	State median	More than 10% above State median
Property Tax, fees and revenues[1] divided by MHI and indexed by population	More than 3.5	1.5 to 3.0	Less than 1.5

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[11] This approach assumes that "the ability of a community to finance a project may be dependent upon existing household financial conditions within that community" (Montana DEQ, 2014; p. 4).

1. The "property tax, fees, and revenues" metric includes charges for services, fees, and forfeitures for governmental activities; charges for services, fines, and forfeitures for business-type activities; and property taxes for governmental activities.

For the unemployment rate and MHI, we used the same data sources as cited in Exhibit 4-2. Because the local unemployment rate is within 1% of the state unemployment rate,[12] the City is mid-range on this indicator. As with the results using EPA's Guidance, the City is weak on the MHI indicator since the local MHI is more than 10% below the state-level MHI. For the poverty rate, data from U.S. Census Bureau (2013b) indicates that the 10.2% of all families in Boulder are below the poverty threshold, which is in the mid-range according to Montana's Guidance. Based on data from U.S. Census Bureau (2013d), the City is also mid-range on the "Low to Medium Income Percentage" (LMI) indicator, with 43.6% of families earning less than 200% of the poverty threshold.

Montana's final Secondary Test indicator is the "Revenues, Taxes, and Fees Burden Index," which is calculated as:

This metric is intended to reflect the government revenue burdens of the local population, and includes the following three revenue streams from the Statement of Activities in the Draft 2014 Audit Report (Denning, Downey & Associates, 2014): charges for services, fines, and forfeitures for governmental activities ($49,598); charges for services, fines, and forfeitures for business-type activities ($712,984); and property tax revenues for governmental activities ($183,236). These revenues sum to $945,818. Dividing by MHI ($36,249 in 2014$; see Exhibit 3-1) and indexing by population (1,250 based on U.S. Census Bureau, 2013a) yields a metric value of 2.1, which is mid-range.

Exhibit 4-5 shows the Secondary Test using Montana DEQ Guidance. The City has a Secondary Test score of 1.8 using this alternative approach (compared with 2.3 using EPA's 1995 Guidance).

Exhibit 4-5: Secondary Score Metrics Based on Montana DEQ Guidance

Indicator	Result	Score	Data Source
Poverty Rate	10.2%	2	U.S. Census Bureau (2013b)

[12] Note that Montana's alternate Secondary Test compares the local unemployment rate to the state, whereas EPA's Guidance compares it to the national rate. In this case, however, either test yields a mid-range outcome for the City.

Low to Medium Income Percentage (LMI)	43.6%	2	U.S. Census Bureau (2013d)
Unemployment	4.50% [compared with 3.90% for the state]	2	June 2015 unemployment rate for Jefferson County and Montana from Bureau of Labor Statistics
Median Household Income	$35,670 [compared with $46,230 for the state]	1	U.S. Census Bureau (2013b; 2013c)
Property Tax, fees and revenues[1] divided by MHI and indexed by population	2.1	2	Tax, fee, and revenue data from 2014 Draft Audit Report
Secondary Score[2]		*1.8*	

1. Includes the following three revenue streams from the Statement of Activities in the 2014 annual financial report: Charges for services, fines, and forfeitures for governmental activities; charges for services, fines, and forfeitures for business-type activities; and property tax revenues for governmental activities.
2. Average of scores for the five indicators.

5   Substantial Impact Analysis

Given an MPS of 2.4% (see Section 3), and a Secondary Score of 2.3 or 1.8 (using EPA's 1995 Guidance or Montana's modified Guidance, respectively; see Section 4), the Substantial Impacts Matrix (Exhibit 5-1) indicates that impacts from the project are likely to be substantial.

Exhibit 5-1. Substantial Impacts Matrix

Secondary Score	Municipal Preliminary Screener		
	Less than 1%	1% to 2%	Greater than 2%
Less than 1.5	?	X	X
1.5 to 2.5	✓	?	X
Greater than 2.5	✓	✓	?

Source: U.S. EPA (1995)
X = impact is likely to be substantial
? = impact is borderline
✓ = impact is not likely to be substantial

Additionally, in assessing whether impacts are likely to be substantial, the discharger may also consider other relevant factors, such as the presence of a failing local industry. For Boulder, one such relevant factor is that the state Senate recently voted to close down the Montana Development Center (Dennison, 2015), which is a large local employer. The facility currently employs about 250 people who primarily live in Boulder, Butte, and Helena (Dennison, 2015). This may have adverse impacts on the community's employment rate and ability to pay for pollution controls, compounding the substantial economic impacts indicated by the MPS and Secondary Test.

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7   Appendix: Description of the Economic Guidance for Water Quality Standards

In order to demonstrate that there would be substantial and widespread economic and social impacts justifying a variance, the discharger must demonstrate that it would face substantial financial impacts, and that the affected community would have significant adverse impacts as a result (i.e., widespread impacts). EPA's 1995 Guidance (U.S. EPA, 1995) outlines the specific steps that the discharger must follow to make these demonstrations. This appendix provides a brief overview of the Guidance as applicable to an entity in the public sector. For a more detailed description of the analysis, see U.S. EPA (1995).

First, to determine whether the pollution control project would entail a substantial impact to an entity in the public sector, there is a two part test. The first part of the test, called the Municipal Preliminary Screener (MPS), is a screening-level ratio designed to trigger additional tests or screen out the possibility of substantial impacts. Since municipalities will pass costs on to households and businesses, this screening is based on how household pollution control costs compare to household income. Generally, if the MPS is less than 1% (i.e., annual household pollution control costs would be less than 1% of median household income), there will not be a substantial economic impact. If the MPS is higher than 1%, then the impacts may be substantial and the discharger proceeds to the second part of the test.

The second part of the test involves calculating multiple indicators (e.g., bond rating, debt ratio, and tax collection ratio) designed to characterize the financial health and socioeconomic status of the community that will bear the costs of the pollution control. This is the Secondary Test. **Exhibit 9-1** shows the indicators used in the Secondary Test and the scores associated with them.[13] The overall Secondary Score is the average of the indicators used.

Exhibit 9-1. Secondary Test Indicators in EPA's Guidance

Indicator	Secondary Indicator Scores		
	Weak (Score of 1)	Mid-Range (Score of 2)	Strong (Score of 3)

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[13] In some cases, if data for a particular indicator is not available, the Guidance directs users to alternative indicators. See U.S. EPA (1995) for more details.

Bond Rating	Below BBB (S&P) Below Baa (Moody's)	BBB (S&P) Baa (Moody's)	Above BBB (S&P) Above Baa (Moody's)
Overall Net Debt as Percent of Full Market Value of Taxable Property	Above 5%	2% - 5%	Below 2%
Overall Net Debt Per Capita	Greater than $3,000	$1,000 - $3,000	Less than $1,000
Unemployment	More than 1% above national average	National average	More than 1% below national average
Median Household Income	More than 10% below state median	State median	More than 10% above state median
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	Above 4%	2% - 4%	Below 2%
Property Tax Collection Rate	< 94%	94% - 98%	> 98%

The MPS and Secondary Test results are evaluated jointly, using the Substantial Impacts Matrix, as shown in **Exhibit 9-2**.

Exhibit 9-2. Substantial Impacts Matrix

Secondary Score	Municipal Preliminary Screener		
	Less than 1%	1% to 2%	Greater than 2%
Less than 1.5	?	X	X
1.5 to 2.5	✓	?	X
Greater than 2.5	✓	✓	?
Source: U.S. EPA (1995) X = impact is likely to be substantial ? = impact is borderline ✓ = impact is not likely to be substantial			

If the evaluation indicates that the pollution control project will place substantial economic burdens on the discharger, the next step is to determine whether the impacts will also be widespread in the surrounding community. This step involves estimating socioeconomic changes due to pollution control costs, such as loss of employment, changes in property values, and higher taxes. In this step, the analysis should consider the direct and indirect effects of control costs. Also, expenditures on pollution control costs are not likely to vanish from the community. These expenditures become business revenues and household incomes that can offset adverse financial impacts experienced by the affected entities.